

Work Order ID 136781

Tuesday, September 08, 2015 8:38:35 AM

136781

Page 1

Item ID: DSI 9730-011

Accept

N900040100

Setup Start ***NS1***

Revision ID:

Stop ***NS2***

Item Name: Shim Installation

Start Date: 9/08/15 Start Qty: 1.00

1 (5)
1

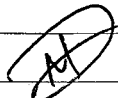
Cust Item ID:

Required Date: 9/09/15 Req'd Qty: 1.00

Customer:

Reference:

Approvals:

Process Plan: 

Date: 9-8-8

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
DSI 9730	A

100	Document Control	0.00
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100

DC

Doc.Control -USB or Paperwork

DOCUMENT CONTROL

Memo

Photocopy bluefile & type labels per PPP DSI9730-011 CHG001

ML5

SEP 09 2015

110	Pick Kit	0.00
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110

Packaging

Packaging

Memo

DAS
6
9-89

27
9-89

SEP 09 2015

120	QC4- 100% Inspect kits for completeness	0.00
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120

QC

Quality Control

Memo

(5)

ISO 9000

DAS
9
9-89

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QS1042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

Work Order ID 136781

Tuesday, September 08, 2015 8:38:35 AM

136781

Page 2

Item ID: DSI 9730-011 Accept ***N900040100*** Setup Start ***NS1***
Revision ID: Stop ***NS2***
Item Name: Shim Installation
Start Date: 9/08/15 Start Qty: 1.00 ***1*** Cust Item ID:
Required Date: 9/09/15 Req'd Qty: 1.00 ***1*** Customer:
Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
130	Packaging	0.00				<u>S</u>		DAS 8 9-89	SEP 09 2015
130	Memo	0.00							
Packaging	Identify and pack for shipping as per PPP DSI9730-011								
140	QC21- Final Inspection - Work Order Release	0.00							
140	Memo	0.00				<u>MCS</u>			SEP 09 2015
QC									
Quality Control									

20150909
SH

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date : _____	Step #: _____	QTY Effective : _____		MRB (QS1042) Approval	
Description Work Order Deviation			Disposition		
			Completed By		
			Lead hand / Supervisor Approval Verification		
			QC / QA Coordinator Approval		
Root Cause		FAULT CATEGORY			
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____			
Misidentified ☐	Past Due ☐				

Picklist Print

Tuesday, September 08, 2015 8:38:40 AM

Page 1

Work Order ID: 136781

136781

Parent Item: DSI 9730-011

DSI 9730-011

Parent Item Name: Shim Installation

Start Date: 9/08/15

Required Date: 9/09/15

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP REV:A 15.09.04 NEW ISSUE DD VERF:JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D5305-1		Manufactured	No				Each	0.0000		210			DAS 6 27 9-89
D5305-1									**				
Shim													
MS21920-24		Purchased	No				Each	82.0000		210			136782 SEP 08 2015
MS21920-24									**				
Clamp													

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval		
Description Work Order Deviation				Disposition				Completed By	
								Lead hand / Supervisor Approval Verification	
								QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY							
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐				
Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐				
Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐				
Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐				
Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐				
Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐				
Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐				
Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐				
LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐				
Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐				
Past Expiry Date ☐	Manufacturing Process ☐	OTHER : _____							
Misidentified ☐	Past Due ☐								

DART SERVICE INSTRUCTION

TO AMEND INSTALLATION INSTRUCTIONS IIN-D119-796 REV. D AND INSTRUCTIONS FOR CONTINUED AIRWORTHINESS ICA-D119-796 REV. 2

REF CANADIAN: STC SH14-45

REF FAA STC: SR03504NY

REF EASA STC: 10052022

1.0 PURPOSE

The purpose of this Dart Service Instruction is to add an aluminum abrasion strip (shim) to the D119-796-101/-103 Fwd Crosstube under the OEM lower clamp assy (P/N 109-0570-20-107) to reduce the abrasion and increase the clamping force on the fwd crosstubes. The DSI9730-011 Kit is available for customers who prefer to use pre-fabricated shims from Dart.

2.0 INSTALLATION

Note: To perform the following installation, the fwd crosstube must be lowered from the aircraft structure sufficiently to allow a minimum gap of 0.50 inches between the mating surfaces of the 109-0570-15-101 Fitting Assy and the D5124-1 Fwd Support.

- 2.1 Remove the (qty 2) 109-0570-20-107 Clamp Assy and (qty 2) outboard MS21920 Clamps and Cushions. Retain hardware.
- 2.2 If not using the DSI9730-011 Shim Kit, fabricate two rectangular shims as per Figure 1 using 16 gauge (0.051in thk) aluminum. Break all sharp edges 0.010 to 0.025 max. Treat with chemical film material (Alodine 1200 or 1201) per MIL-C-5541.
- 2.3 Form the shims to fit the underside of the crosstube in the location shown in Figure 2. Note that the long axis of the shim is along the circumferential direction of the crosstube.
- 2.4 Abrade mating surfaces of the shims and crosstube with Scotch Brite and remove residue. Apply a minimum 0.020"-0.040" (0.51mm - 1.02mm) thk layer of Proseal 890 B1/2 or B2 on the concave surface of the shims and install in the location shown in Figure 2.
- 2.5 Apply clamping pressure using the outboard MS21920 Clamps with Cushions as well as an additional MS21920 Clamps as shown in Figure 2. Tighten the MS21920 Clamps sufficiently to allow even pressure on the circumference of the shims (do not torque the MS21920 Clamps). Allow Proseal 890 to cure for minimum of 36 hours with clamping pressure.
- 2.6 Torque outboard MS21920-24 Clamps securing the D5124-1 Fwd Supports to the crosstube to 80-100 in-lbs (9.0 - 11.3 Nm)
- 2.7 Remove additional MS21920 Clamps and re-install the D119-796-101/-103 Fwd Crosstube with 109-0570-20-107 Clamps in accordance with applicable Maintenance Instructions.

CANADA
DEPARTMENT OF TRANSPORT
AIRCRAFT CERTIFICATION
BRANCH
DAO # 01-O-01

APPROVED

BY: [Signature]
D. SHEPHERD (DE # 02)

DATE: 15.08.20

CERT. NO.: SH14-45

ISSUE NO.: 1

A	NEW ISSUE	AP	15.08.20
REV.	DESCRIPTION	BY	DATE
DESIGN	AP	DART AEROSPACE, LTD HAWKESBURY, ONTARIO, CANADA	
DRAWN	AP		
CHECKED	<u>[Signature]</u>	DRAWING NO.	REV.A
MFG. APPR.	N/A	DSI 9730	SHEET 1 OF 3
APPROVED	<u>[Signature]</u>	TITLE	SCALE
DE APPR.	<u>[Signature]</u>	FWD CROSSTUBE SHIM INSTL	NTS
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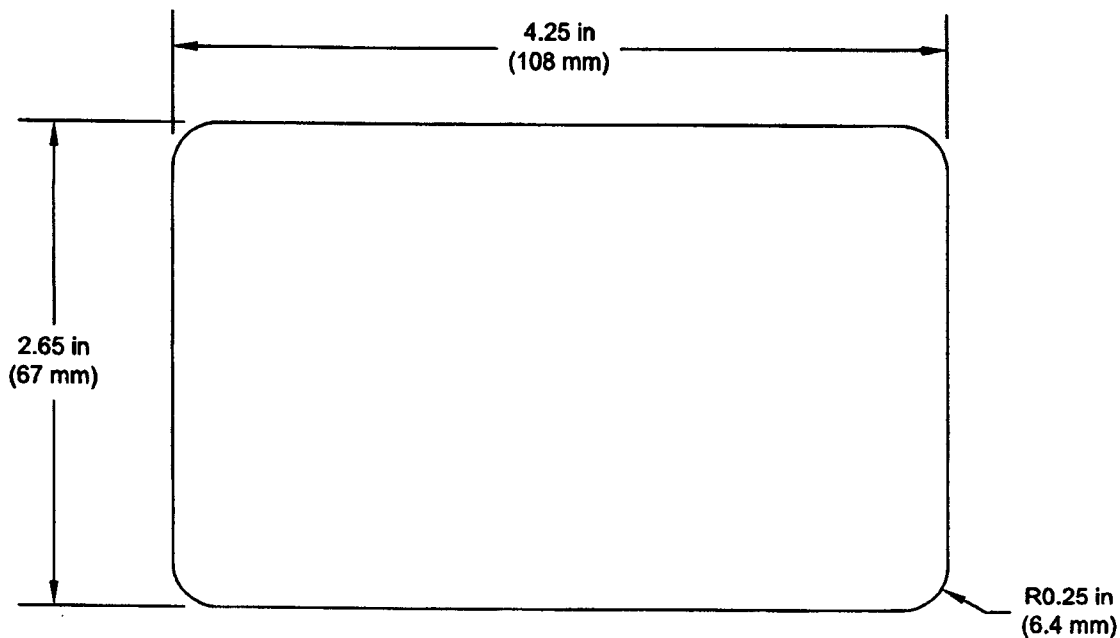


Figure 1: Fwd Crosstube Shim Dimensions (D5305-1 SHIM)

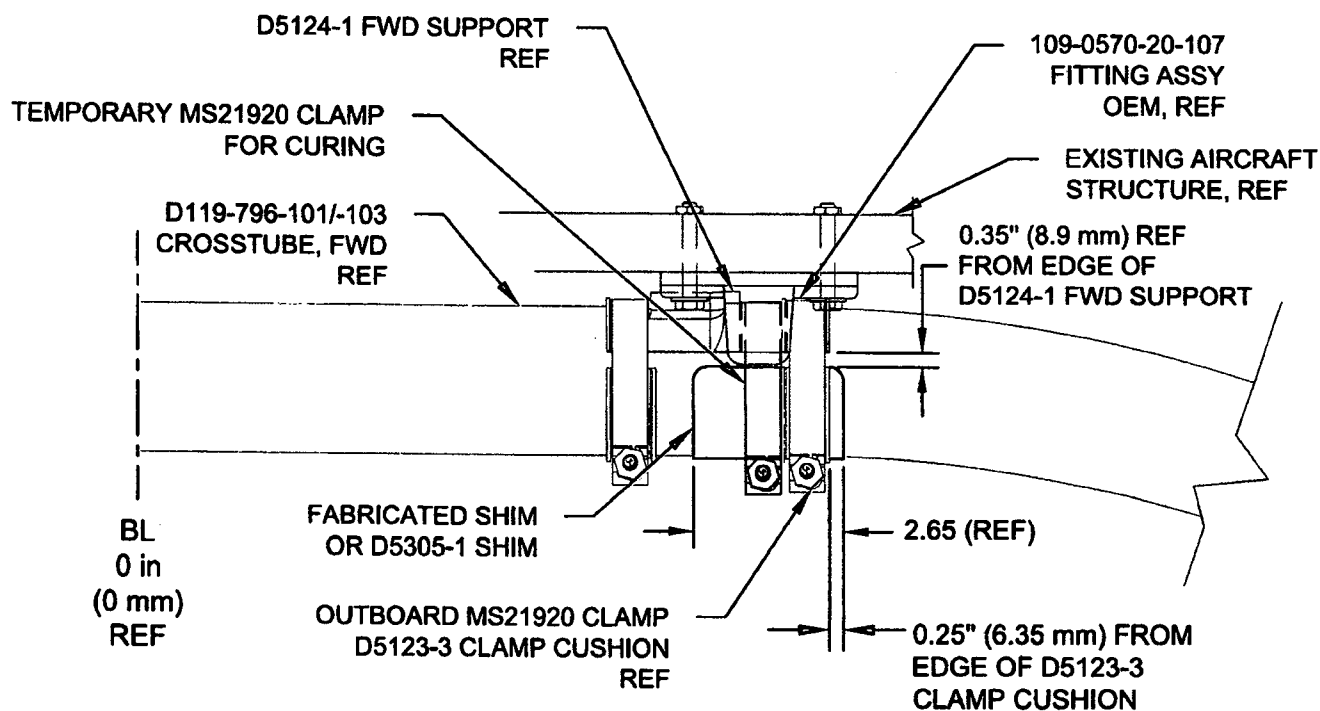
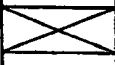


Figure 2: Fwd Crosstube Shim Installation

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CHECKED	<i>GP</i>	DRAWING NO.	REV.A
MFG. APPR.	N/A	DSI 9730	SHEET 2 OF 3
APPROVED	<i>[Signature]</i>	TITLE	SCALE
DE APPR.	<i>[Signature]</i>	FWD CROSSTUBE SHIM INSTL	NTS
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3.0 PARTS LIST

QTY -011	PART NUMBER	DESCRIPTION
	DSI9730-011	SHIM KIT
2	D5305-1	SHIM
2	MS21920-24	CLAMP

4.0 WEIGHT AND BALANCE

There is negligible weight and balance change associated with this modification.

DESIGN	AP	DART AEROSPACE, LTD HAWKESBURY, ONTARIO, CANADA	
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CHECKED		DRAWING NO.	REV.A
MFG. APPR.	N/A	DSI 9730	SHEET 3 OF 3
APPROVED		TITLE	SCALE
DE APPR.		FWD CROSSTUBE SHIM INSTL	NTS
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Work Order ID 136781

Tuesday, September 08, 2015 8:38:35 AM

136781

Page 1

Item ID: DSI 9730-011

Accept

Revision ID:

N900040100

Setup Start ***NS1***

Item Name: Shim Installation

Stop ***NS2***

Start Date: 9/08/15 Start Qty: 1.00

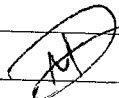
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Required Date: 9/09/15 Req'd Qty: 1.00

Cust Item ID:

Customer:

Reference:

Approvals: Process Plan: 

Date: **5-8-8**

Tooling:

Date:

Run Start ***NR1***

QC:

Date:

SPC (Y/N):

Date:

Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
DSI 9730	A								
100	Document Control	0.00							
100	DOCUMENT CONTROL								
DC	Memo	0.00							
Doc.Control -USB or Paperwork	Photocopy bluefile & type labels per PPP DSI9730-011 CHG001								
110	Pick Kit	0.00							
110									
Packaging	Memo	0.00							
Packaging									
120	QC4- 100% Inspect kits for completeness	0.00							
120									
QC	Memo	0.00							
Quality Control									

MLJ

SEP 09 2015

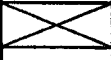
DAS

6

9-8-8

SEP 09 2015

3.0 PARTS LIST

QTY -011	PART NUMBER	DESCRIPTION
	DSI9730-011	SHIM KIT
2	D5305-1	SHIM
2	MS21920-24	CLAMP

4.0 WEIGHT AND BALANCE

There is negligible weight and balance change associated with this modification.

DESIGN	AP	DART AEROSPACE, LTD HAWKESBURY, ONTARIO, CANADA
DRAWN	AP	
CHECKED		DRAWING NO. REV.A
MFG. APPR.	N/A	DSI 9730 SHEET 3 OF 3
APPROVED		TITLE SCALE
DE APPR.		FWD CROSSTUBE SHIM INSTL NTS
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